P-Wave Slowness Surface Approximation for Tilted Orthorhombic Media

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Abstract

We present an analytic approximation for the vertical slowness components of up- and down-going P-waves in 3D tilted orthorhombic media. The perturbation method and the Shanks transform are used in our derivation. The proposed approximation is valid for strongly anelliptic orthorhombic media with tilted symmetry axes. We show an application of the proposed approximation to calculate the τ-p intercept time for multi-layered, tilted orthorhombic media.

The perturbation theory and Shanks transform are used to derive an accurate and analytic formulation for the vertical slowness component of P-waves in tilted orthorhombic media. This formulation is valid for the tilted orthorhombic media with strong anellipticity.